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United States  
General Accounting Office  
Washington, D.C. 20548

Resources, Community, and  
Economic Development Division

B-239836

October 14, 1992



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The Honorable J. James Exon  
United States Senate

Dear Senator Exon:

This letter is in response to your April 10, 1992, request for additional information regarding our report on the process used to select a site for a low-level radioactive waste facility in Nebraska.<sup>1</sup> In your letter and in subsequent discussions with your office, you requested that we provide information on

- reservations that two consulting geologists to the Boyd County LLW (low-level radioactive waste) Monitoring Committee may have about the proposed site in Boyd County, Nebraska, for a low-level radioactive waste disposal facility;
- the monitoring committee's concern that any plans to store mixed (chemically hazardous and radioactive) and decommissioned wastes at the Boyd County facility should be brought out in the facility licensing proceeding; and
- the monitoring committee's concern that if the proposed disposal facility is developed before other states have developed new disposal facilities, Nebraska might become the host to a major part of the low-level and hazardous waste generated in the United States.

As agreed with your office, we discussed these three issues with the two geologists and with the chairman and vice chairman of the Boyd County LLW Monitoring Committee. In addition, to address the latter two issues, we used

<sup>1</sup>Nuclear Waste: Extensive Process to Site Low-Level Waste Disposal Facility in Nebraska (GAO/RCED-91-149, July 5, 1991).

GAO/RCED-93-47R, Nebraska Low-Level Waste

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documents that we had obtained during our review of the nationwide status of low-level radioactive waste disposal initiatives.<sup>2</sup> We updated information for this letter by contacting the Department of Energy (DOE) and the Nuclear Regulatory Commission (NRC). We limited our review of the monitoring committee's concern that Nebraska could become the host for much of the nation's low-level waste to obtaining NRC's interpretation of whether waste generators can obtain emergency access to a disposal facility outside of their state or state-compact.

In summary, the two geologists believe that the Boyd County site probably would not meet regulations limiting discharges of contaminated groundwater. Also, the developer of the proposed disposal facility did not seek authorization to dispose of mixed and decommissioned wastes in the facility. While the developer anticipates that the facility will be used to dispose of such wastes in the future, it will first have to go through a license amendment proceeding. Finally, the Congress, according to NRC, gave the agency authority to grant waste generators emergency access to disposal facilities only if denial of such access could result in a serious and immediate threat to the public health and safety. NRC does not anticipate any situation in which the lack of access to a disposal facility would create such a threat.

#### BACKGROUND

The Low-Level Radioactive Waste Policy Act of 1980, as amended, required states, either separately or in compacts of two or more, to dispose of commercial and certain federal low-level radioactive waste generated within their borders.<sup>3</sup> Nebraska, as the host state for a compact for

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<sup>2</sup>Nuclear Waste: Slow Progress Developing Low-Level Radioactive Waste Disposal Facilities (GAO/RCED-92-61, Jan. 10, 1992).

<sup>3</sup>Since 1990, New York state challenged the constitutionality of the federal law. New York questioned whether the Congress may compel a state to be responsible for and develop a plan for disposing of the waste in its state and to take title to the waste if the state fails to develop such a plan and have disposal facilities operating by 1996. On June 19, 1992, the Supreme Court ruled that although the act's take-title provision was unconstitutional, it could be severed from the remainder of the act.

five states, underwent a site-screening and selection process that led to the selection of a site in Boyd County. US Ecology, a contractor for the compact, conducted the site screening and selection process and is seeking a license from Nebraska to build and operate a low-level radioactive waste disposal facility at the Boyd County site.

#### RESERVATIONS OF TWO GEOLOGISTS

In our July 1991 report, we stated that the detailed geologic and hydrologic assessments at the three candidate sites appeared to have been conducted in a technically correct manner. We also stated that the independent geologists, hired by the local monitoring committees for each of the three candidate sites, agreed that US Ecology's selection of the Boyd County site over sites in Nemaha and Nuckolls counties was correct. Dr. Harold Pierce was the consulting geologist for the Boyd County LLW Monitoring Committee during most of the investigation of the Boyd County site.

The monitoring committee also hired two other geologists (Messrs. Perry Rahn and Arden Davis), who prepared a report on the Boyd County site for the committee in December 1989. In preparing our July 1991 report, we obtained and reviewed the two geologists' report and considered their findings and conclusions. Messrs. Rahn and Davis did not, in their report, conclude that the Boyd County site is unsuitable; however, they expressed concern over the possible contamination of groundwater at the site and the potential discharge of the groundwater into nearby Ponca Creek.

On May 28, 1992, Messrs. Rahn and Davis told us that during relatively wet years, groundwater may move through the area of the proposed disposal facility in a generally northeast direction. According to their calculations, if this movement should occur and the water picks up any radioactivity at the site, releases of radioactivity from the site could exceed permissible limits. For this reason, the geologists believe that the site probably would not meet the regulatory requirements related to discharges of contaminated groundwater from the site boundaries. The geologists said that they have not had a role on the Boyd County project for the monitoring committee since they issued their report.

Messrs. Rahn and Davis asked us to clarify that they were not included among the geologists, hired by the local monitoring committees, who, as we stated in our July 1991

report, "agreed that US Ecology's selection of the Boyd County site over the Nemaha and Nuckolls sites was correct."

MONITORING COMMITTEE'S CONCERNS ABOUT  
MIXED AND DECOMMISSIONED WASTE

"Mixed waste" is waste containing both hazardous chemicals regulated by the Environmental Protection Agency (EPA) and radioactive waste regulated by NRC. "Decommissioned waste" is the radioactive waste remaining from the decommissioning of nuclear power plants. The Boyd County LLW Monitoring Committee is concerned that plans to store either or both of these types of waste at the proposed low-level waste disposal facility should be brought out in the licensing proceeding. The committee's understanding, however, is that the facility developer did not request authorization for disposal of either mixed or decommissioned waste in its application for a license to develop the proposed facility.

Mixed waste

US Ecology's application to the state of Nebraska for a license to build and operate a low-level radioactive waste disposal facility did not include disposal of mixed waste. According to the July 1990 application, the mixed waste permit application will be submitted at a later date. In a May 1990 letter to the compact (of which Nebraska is the host state), US Ecology stated that authorization to dispose of mixed waste at the facility would not be requested until the company had a better understanding of both the composition of the compact region's mixed wastes and the system of dual regulation of these wastes by NRC and EPA.

US Ecology conducted a mixed waste survey for the region and found that (1) the generation of some mixed wastes could be eliminated, (2) other mixed wastes are apparently "treatable," and (3) for mixed waste streams currently without treatment options, waste generators will have to store the wastes until a treatment method is available. Therefore, the company did not deem it prudent or economically feasible to develop a facility for disposal of mixed waste at that time. Instead, the company said it would seek the license necessary to build a disposal facility for the vast majority of the low-level wastes generated within the 5-state area.

Both NRC and EPA regulate mixed waste, and this system of dual regulation has been questioned by states and others. Proposed alternatives include disposal of commercially

generated mixed wastes by DOE or lead regulation of disposal by either EPA or NRC, but not both.

DOE is considering accepting all commercial mixed waste, but a DOE official told us that it is unlikely a decision will be made this year. In June 1992, NRC's staff issued a memorandum to the NRC Commissioners regarding the preliminary results of a survey conducted jointly with EPA to profile mixed waste. On the basis of the survey, the staff projected that the amount of mixed waste generated nationwide in 1990 was 140,000 cubic feet. The survey results also showed that a large portion of this waste was treated, for example, by incineration. Also, NRC and EPA projected that the amount of mixed waste stored by generators at the end of 1990 was 75,000 cubic feet. The survey results also showed that NRC should continue to support DOE's potential acceptance of commercial mixed waste for treatment and disposal.

#### Decommissioned Waste

Similar to mixed waste, US Ecology's license application does not include disposal of decommissioned waste but anticipates disposal of this type of waste at some future time.

In its July 1990 safety analysis report to support the license application, US Ecology stated that during the 30-year operational life of the facility, low-level waste generators in the compact region may be decommissioned. According to the report, regulations of Nebraska's Department of Environmental Control exclude disposal of low-level waste resulting from decommissioning a nuclear reactor until the Department finds that the proposed facility is designed for safe disposal of such waste and gives its approval. If decommissioning occurs, environmental and safety documentation would be prepared to evaluate the safe disposal of decommissioned waste. The report stated that this documentation would provide the bases for a decision to amend the license to allow the facility to accept and dispose of decommissioned waste.

#### CONCERN THAT NEBRASKA MAY HOST WASTE GENERATED OUTSIDE THE COMPACT

The possibility that other states could lose access to existing disposal facilities before facilities in other states are developed led to the monitoring committee's

concern that Boyd County could become the host to low-level and hazardous waste generated all over the United States.

Beginning on January 1, 1993, according to the 1980 low-level waste act, as amended, the three states--Nevada, South Carolina, and Washington--that have been operating disposal facilities for low-level waste are authorized to deny waste generators in other states access to these facilities. The facility in Washington will remain open to serve waste generators located in the 11 states that make up two compacts of states. Nevada plans to close its disposal facility at the end of 1992. South Carolina has decided to keep its facility accessible to waste generators in states that are making progress toward their own disposal facilities. The state, however, can withdraw access to the facility at any time beginning on January 1, 1993.

According to NRC, the Congress did not intend that waste generators outside a compact of states served by a disposal facility could obtain emergency access to that facility on the basis that no disposal facility is available within the generators' state or state-compact. Instead, the Congress gave NRC the authority to grant waste generators emergency access to operating disposal facilities that would normally not be available to them out of concern that denial of such access could result in a serious and immediate threat to the public health and safety.

NRC, which licenses and regulates generators of radioactive waste, addressed the emergency access issue in October 1991.<sup>4</sup> NRC stated that questions about the licensing and operation of new disposal facilities in California and Nebraska had raised concern about potential emergency access determinations by NRC. The agency added that emergency access, which NRC alone can grant, is to be used only under very limited and rare circumstances. Finally, NRC stated that applicants (such as utilities that operate nuclear power plants and medical institutions with nuclear medicine programs) for emergency access would have to provide clear and convincing evidence that they have exhausted all other options for managing their wastes. At a minimum, according to NRC's report, an applicant must evaluate alternatives such as (1) providing storage on site, (2) obtaining access

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<sup>4</sup>Information Notice 91-65: Emergency Access to Low-Level Radioactive Waste Disposal Facilities, NRC (Oct. 16, 1991).

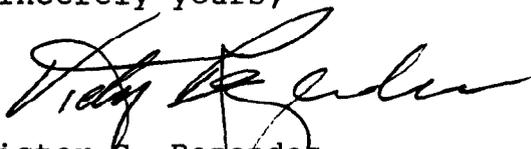
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to a disposal facility by voluntary agreement, (3) purchasing disposal capacity, or (4) ceasing activities that generate such waste.

NRC does not anticipate any situation in which the lack of access to a low-level waste disposal facility would create a serious and immediate threat to the public health and safety. Also, NRC said that it was the intent of the Congress that the emergency access provision neither be used to circumvent other provisions of the act nor be viewed by states without disposal facilities as an alternative to the development of new disposal capacity. Finally, NRC said that "it is difficult to envision, for example, any set of circumstances under which a nuclear power plant could justify a request for emergency access."

If you have any questions about the information in this letter, please call me at (202) 275-1441.

Sincerely yours,



Victor S. Rezendes  
Director, Energy and Science Issues

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